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PROCEEDING

International Seminar

THE ROLE OF VETERINARY SCIENCE
TO SUPPORT MILLENNIUM DEVELOPMENT GOALS

and

THE 12th ASIAN ASSOCIATION OF VETERINARY SCHOOLS CONGRESS



FACULTY OF VETERINARY MEDICINE
UNIVERSITAS AIRLANGGA



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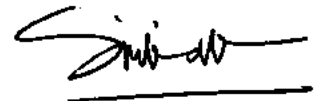
in **INTERNATIONAL SEMINAR
THE ROLE OF VETERINARY SCIENCE
TO SUPPORT MILLENNIUM DEVELOPMENT GOALS**

*was held in JW Marriott Hotel Surabaya - Indonesia
September 5th - 6th, 2013*

President of AAVS
Dean of Faculty Veterinary Medicine
Universitas Airlangga - Indonesia

Prof. Hj. Romziah Sidik., DVM., Ph.D.





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JW MARRIOTT HOTEL, SURABAYA-INDONESIA
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Editors :

Rahaju Ernawati
Fedik Abdul Rantam
Bambang Sektiari
Didik Handijatno
Mustofa Helmi Effendi
Dadik Raharjo
Epy Muhammad Luqman
Lita Rakhma Yustinasari
Widya Paramita Lokapirnasari

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Hak cipta dilindungi oleh Undang-Undang

Diterbitkan Oleh :

Faculty of Veterinary Medicine Universitas Airlangga

Kampus C Mulyorejo Surabaya 60115

Telp. (031) 5992785, 5993016

Fax. (031) 5993015

e-mail : fkh@unair.ac.id

Website : <http://www.fkh.unair.ac.id>



REMARKS OF ORGANIZING COMMITTEE THE ROLE OF VETERINARY SCIENCE TO SUPPORT MILENIUM DEVELOPMENT GOALS

Dr. Dadik Raharjo, M.Kes, DVM.
Chairman

Ladies and Gentleman,

I have the honour of welcome delegates and speakers in International Seminar with the title "role of veterinary science to support milenium development goals" and highest ours appreciation for Your participation on this seminar.

The seminar will exchange information that we can carefully increasing the role of veterinary science to support development goals. Hopefully through this event will take advantage of the many oppotunities to colloborative work between indonesia instituion and also with overseas institution.

On behalf of Organizing committe, I would like to express our sincere gratitude and thanks to all participant at this seminar international.

I hope that this program will be useful and enjoy during stay in Surabaya.

Best Regards



REMARK OF DEAN FACULTY OF VETERINARY MEDICINE UNIVERSITAS AIRLANGGA AAVS PRESIDENT

Prof. Romziah Sidik, Ph.D., DVM.

Bismillahi rochmanir rochim,
Assalamu'alaikum warochmatullahi wabarokatu.

Good morning Ladies and Gentlemen,
Welcome to Surabaya, East Java – Indonesia.

On behalf Faculty of Veterinary Medicine, Universitas Airlangga and Asian Association of Veterinary Schools, I would like to say thank you for the Excellencies: Rector Universitas Airlangga, The Director General of Livestock and Animal Health-Ministry of Agriculture-Republic of Indonesia: Ir. Syukur Iwantoro, MS), The Coordinating Minister for people's Welfare Republic of Indonesia: Dr. Agung Laksono; The OIE Sub Regional Representation for South-East-Asia delegates (Dr. Dirk Van Aken, Dr. Mary Joy Gordoncillo, Dr. Ronello Abila and Ms.Melada Ruengjumroonnath), the Presidents of SEAVSA (Dr. Srihadi agung Priyono) President of IVSA (Indonesian Veterinary School Association): Prof. Made Dhamriyasa, and all Deans of SEAVSA (South-East Asia Veterinary School Association) members, AAVS (Asian Association of Veterinary Schools: Japan, Korea, Taiwan, Indonesia, Malaysia, Thailand, Philippines, Mongolia, Vietnam, Myanmar, Lao and Cambodia) and IVSA (Indonesian Veterinary School Association), The President of Indonesia Veterinary Medicine Association: DVM.Wiwiek Bagja), Quarantine and Inspection Agency Commissioner of Korea: Prof Yong Ho Park), Secretary General and Asian Society of Zoo and Wild Life Medicine: Dr. Kimmura Junpei; All the invite speakers comes from: Faculty of Medicine, Faculty of Veterinary Medicine and Tropical Disease Center of Universitas Airlangga, Feed Technology and Nutrition, Research Institute for Animal Production,-Indonesia, College of Veterinary Medicine Murdoch University, Division of Molecular Medicine and medical Genetic, Department of Pathology, Kobe University, Universiti Putra Malaysia, Graduate School of Agricultural and life Sciences University of Tokyo Japan;

The honorable of all presenter and participants, also the sponsorships who are joint in the International Seminar with the themes: "The Role of Veterinary Science to Support Millennium Development Goals and the 12th Asian Association of Veterinary Schools Congress" during 2 days (5th-6th September 2013), which is Faculty of Veterinary Medicine of Universitas Airlangga as the hosted of the event.

Ladies and Gentlemen,

About 193 United Nation member states and at least 23 international organizations declared Millennium Development Goals (MDGs), and they have agreed to achieve the nine MDGs such as: eradicating extreme poverty and hunger, universal primary education, promoting gender quality, and empowering women, reducing child mortality rates, improving maternal health, combating HIV /AIDS, malaria and other diseases, ensuring environmental sustainability, and developing a global partnership for development.

Animal diseases which form an epizootic (Apthae epizootic, mad cows diseases) and or zoonotic like Avian Flu, SARS (Severe Acute Respiratory Syndrome), Salmonellosis, Brucellosis, tuberculosis, rabies are threat to global security warned by Director General of the Word Organization as well as World Animal Health Organization (OIE). These diseases have potentially disastrous consequences if it's not eliminates at their primary source. As we know that about systemic review of 1,415 pathogens are known about 61% infects humans.

To combat and fighting zoonosis diseases, Indonesia has launching the National Commission of Zoonosis Control under Coordinator Minister for people's Welfare Republic of Indonesia.

So, the Veterinary Medicine Schools in Asian country has responsibility to provide some courses in the curricula to achieve Day one competencies. Four pillars could be strengthening by Veterinary School such as: education system, research, public extension and or services, and collaborations. The quality assurance should be guaranteed by each Veterinary Schools. In the event of AAVS congress programs to produce and launch the Logo of AAVS, and the consequence to be added the logo profile and philosophy in AAVS by Law. The other program is to perform Veterinary school curricula and gap analysis. Therefore, Veterinary school curricula in Asian country could be standardized.

On behalf Organizing Committee, I would like to say thank you to Director Research and Public Community Services Board of Directorate General of Higher Education, Ministry Education and Culture Republic of Indonesia, The OIE SRR SEA, Faculty of Veterinary Medicine Universitas Airlangga, IVSA, and the sponsorships from veterinary industries for supporting finance that the event become perform by successfully.

Ladies and Gentlemen,

Again, I would like to say thank you for your participative to the event, and please follow and enjoy the programs as well as your visit in Surabaya by happiness.

Billahi taufik wal hidayah, Wassalamu'alaikum warohmatullahi wa barokatu.



REMARKS OF RECTOR OF UNIVERSITAS AIRLANGGA
Prof. Dr. H. Fasich, Apt.

Assalamu'alaikum Warahmatullahi Wabarakatuh

First of all, let us pray to Allah SWT that because of His blessings we are able to be here in this very important event.

Secondly, I would like to say to all participants: Welcome to Surabaya, East Java, Indonesia!

It is indeed a great honour for me to have the opportunity to be among the participants of this very special occasion, where all of us are going to have in-depth discussion about a very important and interesting topic closely related to veterinary science and the millennium development goals as a way to increase the quality of human health.

Indonesia's Millennium Development Goals (MDGs) are based on the eight international development goals that were officially established following the Millennium Summit of the United Nations in 2000, one of touches on the effort to combat wide-spread diseases such as HIV/AIDS and diseases transmitted by animals such as malaria, avian flu, swine flu, and so forth, which could be a serious threat to global security and human development.

Therefore, concerns over these MDGs from the point of view of veterinary science, especially among the researchers, have to be raised these day. There are numerous recent for conducting scientific research and other scientific activities to bring the MDGs to a success.

In this very special event, I would like to express my deepest appreciation to all members Asian Association of Veterinary Schools for their success in conducting better and better collaborations. Such collaborations are a pre-requisite for all efforts in improving performances, including the standardization of veterinary curricula in the ASEAN region and among Asian countries, in controlling the spread of zoonosis, and in developing and improving bio safety, bio security, surveillance, animal health and animal production.

I strongly believe and hope that this seminar and congress will be able to strengthen the existing networks that occurred among all the members of the association, as the main step in the eradication and prevention of infectious diseases, especially once that are related to animals, to support the Millennium Development Goals.

To all participants, I would like to thank you very much for coming to this forum. And to the organizing committee, I would like to give my sincerest appreciation for their wonderful job and hardwork in organizing this event.

I hope the seminar and the congress will be fruitful to all of use and lastly, please enjoy your stay in Surabaya.

Thank you very much,

Wassalammu'alaikum warahmatullahi Wabarakatuh.

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THE USE OF RECYCLE SOYBEAN FERMENTED CAKE (TEMPE) WITH CELLULOLYTIC BACTERIA FROM *Spodoptera litura* (ULAT GRAYAK) AS CORN SUBSTITUTION TO CARCASS AND ABDOMINAL FAT PERCENTAGE OF DUCK

Sri Hidanah and Dady Soegianto Nazar

Department of Animal Husbandry Faculty of Veterinary Medicine Airlangga University

Email :s_hidanah@yahoo.com

ABSTRACT

An experiment was conducted to evaluate the use of fermentation recycle soybean fermented cake (tempe) with cellulolytic bacteria from *spodoptera litura* (Ulat Grayak) as corn substitution to carcass and abdominal fat percentage of duck. This experiment used 25 samples of duck and they were treated by fermentation recycle soybean fermented cake. Samples was classified into five groups and five replications. This research used Completely Randomized Design method. P0 as a control, did not use recycle soybean fermented cake, P1 used recycle soybean cake 15%, P2 used recycle soybean fermented cake 15%, P3 used recycle soybean cake 30% and P4 used recycle soybean fermented cake 30%. Time of this experiment was one month. The result of this research showed that the use of by product soybean fermented cake (tempe) as corn substitution to final body weight, carcass weight and carcass percentage of duck was not different significantly ($P > 0,05$) and to abdominal fat percentage was significantly ($P < 0,05$). Conclusion of this research was recycle soybean fermented cake could use as substitution of corn on maximal percentage mixed duck 1 feed.

Key words :Recycle soybean fermented cake, cellulolytic bacteria, carcass, abdominal fat percentage, duck.

INTRODUCTION

The demand of livestock product particularly meat and duck eggs is getting increase each year. The major factors which hold the significant roles of the duck farming are not only the breeds and the management of livestock raising but also the feed. One of ingredients which must be provided in duck portion is corn, with the amount between 50%-60% from total portion (Suharno and Amri, 2010).

The corn production development in Indonesia is quite slow so that it causes Indonesia has to import corn and this condition is getting increase each year, even from 1990s Indonesia's status has changed to be a net-importer country. The impact of it for Indonesia fodder industries which used imported corn as the major ingredient was the increasing of production cost, so that it caused the development of Indonesia feed industries disturbed (Kariyasa and Sinaga, 2004).

To cover the high cost of feed it needed alternative ingredient feed (Bidura, 2005). The requirements of choosing for the ingredient fodder as portion are easy to get, low cost, no compete with human, no poisonous, and has nutrient which is needed by the livestock. (Sunarso and Christiyanto, 2009).

One of alternative ingredient feed which can be used as fowl feed is the epidermis of soybean grains of recycle soybean fermented cake. The epidermis of soybean grains has quite high crude fiber about 44,61% (Hidanah *et al.*, 2009). The epidermis of grains has advantage to reduce cholesterol and fat accumulation in the body. (Pilliang, 1997). To increase the quality of recycle soybean cake can be done by fermentation process (Sukada *et al.*), Wizna *et al.* (2006). The use of cellulolytic bacteria (*Cellulomonas sp*) can change the crude fiber and increasing crude protein.

The use of *cellulomonas* bacteria which isolated from *Spodoptera lituras'* gastrointestinal, expected can ferment recycle soybean cake well compare with others cellulolytic bacteria. *Spodoptera litura* is the pest of soybean which attack soybean leaves and grains (Rukmana & Yuniarsih, 2006). The assumption is that bacteria *Cellulomonas sp* in the *Spodoptera litura's* gastrointestinal is a specific cellulolytic bacteria to digest soybean cellulose.

MATERIALS AND METHODS

The research was held at the laboratory of Department of Animal Husbandry Faculty of Veterinary Medicine Airlangga University Surabaya to make the fermentation of recycle soybean fermented cake as a substitution ingredient and to make portion. The treatment of the sample animals were held in the animal cage trial at Faculty of Veterinary Medicine Airlangga University Surabaya.

Dry recycle soybean cake was grinded into powder. The *cellulomonas sp* which used in fermentation process was isolated from *spodoptera litura's* gastrointestinal, the amount of bacteria was 10^8 /cc by number of 5%, it was provided with sterile water as the diluents solutions by number of 15% from the amount of sample and 3% of drops from the amount of diluents. *Cellulomonas sp* which had been diluted, sprayed into recycle soybean cake powder, mixed to be homogenous, then wrapped by plastic bag and perforated in one side then fermented by anaerob facultative for seven days. After finishing fermentation process, plastic bag was opened and aired in the wind to stop fermentation process (Hidanah, et al, 2009).

This research using 25 sample ducks aged 24 weeks which divided

into five different treatment groups, they were P0, P1, P2, P3, and P4 repeated for 5 times. Before the treatment the sample ducks were adapted for a week. Moreover the sample ducks were moved from animal cage into battery cage for treatment in a month. The feed for treatment was given by number of 220 gram/day, it was given twice a day in the morning and in the afternoon, and drink was given by ad libitum.

The treatment for each group was: P0 : Without recycle soybean fermented cake powder in the portion (as controller). P1 : With 15% recycle soybean cake powder in the portion. P2 : with 15 % recycle soybean fermented cake powder in the portion. P3 : with 30% recycle soybean cake powder in the portion. P4 : with 30% recycle soybean fermented cake powder in the portion. Observational study was done toward the percentage of the amount of carcass and abdominal fat. The data was taken in the last fourth week and the sample of ducks were not given feed for 12 hours pre-weighed, then the sample ducks were measure to get final weight before they were slaughtered (Sukada, 2003). To know be amount number of carcass, first the sample ducks had to be slaughtered, cleaned the feathers, took out the entrails, cut the heads from nape of the necks and cut the feet from tarsal joints then the sample ducks were ready to be measured.

The experimental design using completely randomized design (RAL) which consists of five treatments and five repetitions. The data of the research is analyzed by Anova if there is a significant difference and then to be continued by Duncan's Test with significance degree of 5%.

Table 1. Duck's feed composition (%)

Feed Ingredient (%)	P0	P1	P2	P3	P4
Corn	61,00	46,00	46,00	31,00	31,00
Fish Powder	13,80	13,80	13,80	13,80	13,80
Soybean Meal	5,60	5,60	5,60	5,60	5,60
Rice bran	14,70	14,70	14,70	14,70	14,70
Soybean	4,30	4,30	4,30	4,30	4,30
Coconut oil	0,30	0,30	0,30	0,30	0,30
Premix	0,30	0,30	0,30	0,30	0,30
recycle soybean cake	0	15,00	-	30,00	-
recycle soybean fermented cake	-	-	15,00	-	30,00

Table 2. Average and Contents Deviation Standard of final body weight (g), Carcass weigh (g), Carcass (%), and Abdominal fat (%).

	Treatments				
	P0	P1	P2	P3	P4
final body weight (g)	1500 ^a ±180	1428 ^a ± 44	1420 ^a ±179	1334 ^a ±98	1380 ^a ±78
Carcass weigh (g)	790 ^a ±80	713 ^a ±82	765 ^a ±118	713 ^a ±82	756 ^a ±73
Carcass (%)	52,83 ^a ±3,35	50,08 ^a ±7,02	53,78 ^a ±3,48	53,45 ^a ±4,82	54,84 ^a ±4,02
Abdominal Fat(%)	3,32 ^b ±1,28	2,08 ^a ±0,54	2,22 ^{ab} ±0,98	2,07 ^a ±0,55	2,64 ^{ab} ±0,38

Explanation: different superskrip in the same column shows significant difference (p<0,05)

RESULTS AND DISCUSSION

Average and Contents Deviation Standard of final body weight, carcass weight, carcass percentage, and abdominal fat percentage of ducks can be seen on the Table 2. According to Table 2, it shows that the final weight parameter, carcass weight, carcass percentage of ducks which fed by fodder contains recycle fermented epidermis using isolated *spodobtera litura's* cellulolytic bacteria show that there was not significant different result (P>0,05). For abdominal fat parameter shows a significant different result (P<0,05). It shows that feeding them with soybean epidermis as the substitution of corn until 30% does not influence to the final weight, carcass weight, carcass percentage, even feeding them with soybean epidermis as substitution of corn can decrease abdominal fat.

There are some factors which influence to carcass weight such as ducks' race (strain), weight of life, treatment, sex, consumption of feed and nutrient of feed (Rasyaf, 2000). According to Wiryawan *et al.* (2009)

the amount feed consumption is largely determined by the energy content in portion, if the energy content in portion is high so the consumption of feed will decrease and on the other hand if the energy content in portion is low so the consumption of feed will increase to fulfill the need of energy. Protein is needed by laying ducks to grow particularly to develop and to form tissue. In case of giving less protein will cause abnormal growth and development (Asmara *et al.*, 2009)

Carcass percentage which achieve in this research is about 50,08% to 54,13%. It is in the normal range or a little lower, according to Austic's and Nesheim's (1990), that carcass percentage is about 53% to 63% commonly. The result of this research shows that carcass percentage did not increase because the high energy of portion is used mostly to digest crude fiber.

The result of this research of abdominal fat percentage of laying ducks shows that there is a significant different among the treatments (p < 0,05). The difference occurred because

the higher crude fiber was given to the ducks sample made the fat was getting lower. The excess of carbohydrates in the body will be stored as fat reserves including muscles fat and intra muscular fat. In the case of less nutrients so the needs of energy will be obtained by mobilizing of triglyceride which is as the resource of energy reserves for the animal body (Vitriasi, 1998). Crude fiber feed grains epidermis also have advantage to decrease cholesterol and fat body accumulation of livestock (Piliang, 1997)

CONCLUCIONS

The use of recycle soybean cake and recycle soybean fermented cake by number of 15% and 30% as corn substitution does not influence toward final weight, carcass weight, and carcass duck percentage. The use of recycle soybean cake and recycle soybean fermented cake by number of 15% and 30% as corn substitution can decrease fat abdominal percentage of ducks.

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